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Department of Health Services
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Prevention of Hepatitis A by Vaccine and Immune Globulin

The following guidelines are based on the recommendations of the American Academy of Pediatrics (Pediatrics 1996; 98:2107-15) and the USPHS Advisory Committee on Immunization Practices (MMWR 1997; 45/No. RR-15).

Hepatitis A Vaccine Description

Two manufacturers market pediatric and adult hepatitis A vaccines in this country. SmithKline Beecham (SKB) markets Havrix, and Merck markets VAQTA. Both are inactivated vaccines composed of viral antigens from hepatitis A-infected human diploid cell cultures. Both contain traces of formalin and alum. Havrix also contains traces of 2-phenoxymethanol.

Hepatitis A vaccines, which are approved for persons age 2 years and older, are administered intramuscularly, per the dosages and schedules shown in Table 1. It should be noted that SKB marketed a 3-dose (360 EL.U.) pediatric preparation of Havrix until late-1996. Doses were given at 0, 1, and 6-12 months. Children partially immunized with this preparation can complete the series with the currently marketed 2-dose preparations of pediatric Havrix or with pediatric VAQTA. In either case, the 3-dose schedules should be followed in finishing the series.

It is preferable but not essential to give doses of hepatitis A vaccine produced by the same manufacturer. Hepatitis A vaccine can be given simultaneously, at a separate anatomic site, with other pediatric, adult and foreign travel vaccines, as well as with immune globulin preparations. Contraindications include an anaphylactic reaction to a prior dose of the vaccine or any of the vaccine components. Vaccination of a person who is already immune to hepatitis A, while not indicated, is not harmful (i.e., does not increase the risk for adverse events).

Postvaccination serologic testing is indicated only for immunocompromised persons. Such testing can be done one month or more after the second dose, using a sensitive anti-hepatitis A virus IgG antibody assay. (Immunization usually does not result in detectable anti-hepatitis A IgM antibody.) If seronegative after vaccination, the 2-dose series should be repeated. For immunocompetent persons no booster doses are needed; indications are that vaccine-induced protection can last 20 years.

Persons for Whom Hepatitis A Immunization is Recommended

- **Persons traveling to or working in countries with intermediate or high infection endemicity** - essentially all countries except the U.S., Canada, western Europe, Japan, Australia and New Zealand. Table 2 contains pre-exposure hepatitis A prophylaxis recommendations for travelers. For persons whose onset of exposure will occur within 4 weeks of receipt of first vaccine dose, IG should also be given to ensure prompt protection. One dose of hepatitis A vaccine results in nearly 100% seroconversion and protection for at least 6 months. The second vaccine dose confers long-term protection.

- **Children in communities with increased rates of hepatitis A infection** and periodic hepatitis outbreaks where the local health department has launched a community-wide pediatric hepatitis A immunization program.

- **Native American and Alaskan native children**.

- **Homosexual and bisexual males**.

- **Users of illicit drugs**, both injecting and non-injecting drugs.

- **Persons with chronic liver disease**. This includes HBsAg+ and/or anti-HCV+ persons if they also have clinical or laboratory evidence of chronic liver disease.

- **Persons who receive blood clotting-factor concentrates**.

- **Workers with hepatitis A-infected primates and persons working with hepatitis A virus in research laboratory settings**.

Hepatitis A immunization is **NOT** routinely recommended for other occupational groups, such as health care or clinical laboratory workers, sewage workers, child care facility staff, or commercial food handlers because of lack of demonstrated occupational infection risk.

Vaccines for Children (VFC) Program and Public Clinics

Persons aged 2-18 years served by these programs can receive federally-purchased hepatitis A vaccine for all of the above indications, except for foreign travel.

Post-Exposure Prophylaxis

See Table 3. Immune globulin (IG), given within 14 days of exposure, is 80-90% effective in preventing disease. U.S. distributors of IG are FFF Enterprises (800/843-7477) and American Red Cross Blood Services-New England Region (617/461-2000). Persons who have had one dose of hepatitis A vaccine at least 1 month before exposure do not need IG, though a second dose may be prudent. Efficacy of hepatitis A vaccine for post-exposure prophylaxis, however, is unknown.

Situations where post-exposure prophylaxis is indicated:

- **Household or sexual contact** with a confirmed hepatitis A case while infectious.

- **Child day care centers and day care homes** with case(s) within the past 3 weeks - Give all staff and attendees IG if (a) one or more cases occur in children or employees, or (b) cases occur in 2 or more households of attendees. If no children in diapers attend, then IG needs to be given only to room contacts of index case. When cases occur in 3 or more families, IG should also be considered for members of households with children attending the day care facility in diapers. New employees and attendees should receive IG up to 6 weeks after the last case. Persons with acute hepatitis A should be excluded from the facility until 1 week after onset of illness.

- **Common-source exposure to contaminated food or water** - If a food handler has hepatitis A, give IG to other food handlers at the same location. Giving IG to patrons may be indicated if the case directly handled uncooked foods or foods after cooking while infectious and had diarrhea or poor hygienic practices.

- **Custodial institutions** - Residents and staff in close personal contact with infected custodial patient(s) should receive IG.

Schools, hospitals, office, other work settings - IG is not routinely indicated when a single case occurs and the source of infection appears to be outside the setting. If transmission is occurring in the setting, however, IG should be given to close contacts. Vaccine could be considered if a prolonged outbreak is involved.

Reported by: *The Immunization Branch and the Disease Investigations and Surveillance Branch, Division of Communicable Disease Control, California Department of Health Services.*

TABLE 1. Doses and Schedules for Hepatitis A Vaccines

Age (years)	Vaccine and Manufacturer	Dose	Volume	2-Dose Schedule
2 through 18*	Havrix, SKB	720 EL.U.	0.5mL	Initial, 6-12 mo later
	VAQTA, Merck	25 U	0.5mL	Initial, 6-18 mo later
19 and older*	Havrix, SKB	1440 EL.U.	1.0mL	Initial, 6-12 mo later
	VAQTA, Merck	50 U	1.0ml	Initial ,6-12 mo later

* For VAQTA, age cut off between "pediatric" (25U) and "adult" (50U) preparation is the 18th, rather than the 19th, birthday.

TABLE 2. Pre-exposure Prophylaxis for Hepatitis A Infection for Travelers

Age	Exposure Duration	Prophylaxis
<2 yrs	<3 mo	IG 0.02 mL/kg
	3-5 mo	IG 0.06 mL/kg
	Long-term	IG 0.06 mL/kg at departure and every 5 mo. thereafter
≥2 yrs**	<3 mo	Hep A vaccine or IG 0.02 mL/kg
	3-5 mo	Hep A vaccine or IG 0.06 mL/kg
	Long -term	Hep A vaccine

** If ≥ 1 month before departure, hepatitis A vaccine alone is sufficient (one dose produces nearly 100% seroconversion and protection for at least 6-12 months).

TABLE 3. Postexposure Prophylaxis for Hepatitis A

Time Since Exposure	Future Exposure Likely	Age	Prophylaxis
<14 days	No	All ages	IG (0.02 mL/kg)
	Yes	≥2yr.	IG (0.02 mL/kg), and Hep A vaccine***
≥14 days	No	All ages	No prophylaxis
	Yes	≥2 yr.	Hep A vaccine***

*** Seroconversion may have occurred from exposure. (The IG 0.02 mL/kg dose will not result in antibody detectable by standard methods.) Vaccine may be withheld until antibody levels are measured at 4 weeks or more after exposure. However, vaccine may be administered regardless of immune status (will not help if already immune but not harmful).